

Schwarzen

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RAW SEQUENCE LISTING
PATENT APPLICATION US/08/737,904F

DATE: 04/27/2000
TIME: 17:09:16

Input Set: H737904F.RAW

This Raw Listing contains the General Information
Section and up to first 5 pages.

PS P#27

1 <110> APPLICANT: Griffith, Irwin J et al.
2 <120> TITLE OF INVENTION: T CELL EPITOPES OF RYEGRASS POLLEN ALLERGEN
3 <130> FILE REFERENCE: IMI-040CP3
4 <140> CURRENT APPLICATION NUMBER: US/08/737,904F
5 <141> CURRENT FILING DATE: 1996-11-20
6 <150> EARLIER APPLICATION NUMBER: 08/106,016
7 <151> EARLIER FILING DATE: 1993-08-13
8 <160> NUMBER OF SEQ ID NOS: 60
9 <170> SOFTWARE: PatentIn Ver. 2.0
10 <210> SEQ ID NO 1
11 <211> LENGTH: 1229
12 <212> TYPE: DNA
13 <213> ORGANISM: Escherichia coli
14 <220> FEATURE:
15 <221> NAME/KEY: CDS
16 <222> LOCATION: (40)..(942)
17 <400> SEQUENCE: 1
18 cgctatccct ccctcgtaca aacaaacgca agagcagca atg gcc gtc cag aag 54
19 Met Ala Val Gln Lys
20 1 5
21 tac acg gtg gct cta ttc ctc gcc gtg gcc ctc gtg gcg gcc ccg gcc 102
22 Tyr Thr Val Ala Leu Phe Leu Ala Val Ala Leu Val Ala Gly Pro Ala
23 10 15 20
24 gcc tcc tac gcc gct gac gcc ggc tac acc ccc gca gcc gcg gcc acc 150
25 Ala Ser Tyr Ala Ala Asp Ala Gly Tyr Thr Pro Ala Ala Ala Thr
26 25 30 35
27 ccg gct act cct gct gcc acc ccg gct gcg gct gga ggg aag gcg acg 198
28 Pro Ala Thr Pro Ala Ala Thr Pro Ala Ala Ala Gly Gly Lys Ala Thr
29 40 45 50
30 acc gac gag cag aag ctg ctg gag gac gtc aac gct ggc ttc aag gca 246
31 Thr Asp Glu Gln Lys Leu Leu Glu Asp Val Asn Ala Gly Phe Lys Ala
32 55 60 65
33 gcc gtg gcc gcc gct gcc aac gcc cct ccg gcg gac aag ttc aag atc 294
34 Ala Val Ala Ala Ala Ala Asn Ala Pro Pro Ala Asp Lys Phe Lys Ile
35 70 75 80 85
36 ttc gag gcc gcc ttc tcc gag tcc tcc aag ggc ctc ctc gcc acc tcc 342
37 Phe Glu Ala Ala Phe Ser Glu Ser Ser Lys Gly Leu Leu Ala Thr Ser
38 90 95 100
39 gcc gcc aag gca ccc ggc ctc atc ccc aag ctc gac acc gcc tac gac 390
40 Ala Ala Lys Ala Pro Gly Leu Ile Pro Lys Leu Asp Thr Ala Tyr Asp
41 105 110 115
42 gtc gcc tac aag gcc gcc gag ggc gcc acc ccc gag gcc aag tac gac 438
43 Val Ala Tyr Lys Ala Ala Glu Gly Ala Thr Pro Glu Ala Lys Tyr Asp
44 120 125 130

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45      gcc ttc gtc act gcc ctc acc gaa gcg ctc cgc gtc atc gcc ggc gcc      486
46      Ala Phe Val Thr Ala Leu Thr Glu Ala Leu Arg Val Ile Ala Gly Ala
47      135                               140                               145
48      ctc gag gtc cac gcc gtc aag ccc gcc acc gag gag gtc cct gct gct      534
49      Leu Glu Val His Ala Val Lys Pro Ala Thr Glu Glu Val Pro Ala Ala
50      150                               155                               160                               165
51      aag atc ccc acc ggt gag ctg cag atc gtt gac aag atc gat gct gcc      582
52      Lys Ile Pro Thr Gly Glu Leu Gln Ile Val Asp Lys Ile Asp Ala Ala
53      170                               175                               180
54      ttc aag atc gca gcc acc gcc gcc aac gcc gcc ccc acc aac gat aag      630
55      Phe Lys Ile Ala Ala Thr Ala Ala Asn Ala Ala Pro Thr Asn Asp Lys
56      185                               190                               195
57      ttc acc gtc ttc gag agt gcc ttc aac aag gcc ctc aat gag tgc acg      678
58      Phe Thr Val Phe Glu Ser Ala Phe Asn Lys Ala Leu Asn Glu Cys Thr
59      200                               205                               210
60      ggc ggc gcc tat gag acc tac aag ttc atc ccc tcc ctc gag gcc gcg      726
61      Gly Gly Ala Tyr Glu Thr Tyr Lys Phe Ile Pro Ser Leu Glu Ala Ala
62      215                               220                               225
63      gtc aag cag gcc tac gcc gcc acc gtc gcc gcc gcg ccc gag gtc aag      774
64      Val Lys Gln Ala Tyr Ala Ala Thr Val Ala Ala Ala Pro Glu Val Lys
65      230                               235                               240                               245
66      tac gcc gtc ttt gag gcc gcg ctg acc aag gcc atc acc gcc atg acc      822
67      Tyr Ala Val Phe Glu Ala Ala Leu Thr Lys Ala Ile Thr Ala Met Thr
68      250                               255                               260
69      cag gca cag aag gcc ggc aaa ccc gct gcc gcc gct gcc aca ggc gcc      870
70      Gln Ala Gln Lys Ala Gly Lys Pro Ala Ala Ala Ala Thr Gly Ala
71      265                               270                               275
72      gca acc gtt gcc acc ggc gcc gca acc gcc gcc gcc ggt gct gcc acc      918
73      Ala Thr Val Ala Thr Gly Ala Ala Thr Ala Ala Ala Gly Ala Ala Thr
74      280                               285                               290
75      gcc gct gct ggt ggc tac aaa gcc tgatcagctt gctaataac tactgaacgt      972
76      Ala Ala Ala Gly Gly Tyr Lys Ala
77      295                               300
78      atgtatgtgc atgatccggg cggcgagtgg ttttgttgat aattaatctt cgttttcgtt      1032
79      tcatgcagcc gcgatcgaga gggcttgcat gcttgtaata attcaatatt tttcatttct      1092
80      ttttgaatct gtaaatcccc atgacaagta gtgggatcaa gtcggcatgt atcaccgttg      1152
81      atgcgagttt aacgatgggg agtttatcaa agaattttatt attaaaaaaaa aaaaaaaaaa      1212
82      aaaaaaaaaa aaaaaaa      1229
83      <210> SEQ ID NO 2
84      <211> LENGTH: 301
85      <212> TYPE: PRT
86      <213> ORGANISM: Escherichia coli
87      <400> SEQUENCE: 2
88      Met Ala Val Gln Lys Tyr Thr Val Ala Leu Phe Leu Ala Val Ala Leu
89      1 5 10 15
90      Val Ala Gly Pro Ala Ala Ser Tyr Ala Ala Asp Ala Gly Tyr Thr Pro
91      20 25 30
92      Ala Ala Ala Ala Thr Pro Ala Thr Pro Ala Ala Thr Pro Ala Ala Ala
93      35 40 45
94      Gly Gly Lys Ala Thr Thr Asp Glu Gln Lys Leu Leu Glu Asp Val Asn

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95          50          55          60
96 Ala Gly Phe Lys Ala Ala Val Ala Ala Ala Asn Ala Pro Pro Ala
97      65          70          75          80
98 Asp Lys Phe Lys Ile Phe Glu Ala Ala Phe Ser Glu Ser Ser Lys Gly
99          85          90          95
100 Leu Leu Ala Thr Ser Ala Ala Lys Ala Pro Gly Leu Ile Pro Lys Leu
101          100          105          110
102 Asp Thr Ala Tyr Asp Val Ala Tyr Lys Ala Ala Glu Gly Ala Thr Pro
103          115          120          125
104 Glu Ala Lys Tyr Asp Ala Phe Val Thr Ala Leu Thr Glu Ala Leu Arg
105          130          135          140
106 Val Ile Ala Gly Ala Leu Glu Val His Ala Val Lys Pro Ala Thr Glu
107          145          150          155          160
108 Glu Val Pro Ala Ala Lys Ile Pro Thr Gly Glu Leu Gln Ile Val Asp
109          165          170          175
110 Lys Ile Asp Ala Ala Phe Lys Ile Ala Ala Thr Ala Ala Asn Ala Ala
111          180          185          190
112 Pro Thr Asn Asp Lys Phe Thr Val Phe Glu Ser Ala Phe Asn Lys Ala
113          195          200          205
114 Leu Asn Glu Cys Thr Gly Gly Ala Tyr Glu Thr Tyr Lys Phe Ile Pro
115          210          215          220
116 Ser Leu Glu Ala Ala Val Lys Gln Ala Tyr Ala Ala Thr Val Ala Ala
117          225          230          235          240
118 Ala Pro Glu Val Lys Tyr Ala Val Phe Glu Ala Ala Leu Thr Lys Ala
119          245          250          255
120 Ile Thr Ala Met Thr Gln Ala Gln Lys Ala Gly Lys Pro Ala Ala Ala
121          260          265          270
122 Ala Ala Thr Gly Ala Ala Thr Val Ala Thr Gly Ala Ala Thr Ala Ala
123          275          280          285
124 Ala Gly Ala Ala Thr Ala Ala Ala Gly Gly Tyr Lys Ala
125          290          295          300

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126 <210> SEQ ID NO 3

127 <211> LENGTH: 20

128 <212> TYPE: PRT

129 <213> ORGANISM: Escherichia coli

130 <220> FEATURE:

131 <223> OTHER INFORMATION: all occurrences of Xaa=hydroxyproline

132 <400> SEQUENCE: 3

W--> 133 Ala Asp Ala Gly Tyr Thr Xaa Ala Ala Ala Ala Thr Xaa Ala Thr Xaa
 134 1 5 10 15

W--> 135 Ala Ala Thr Xaa
 136 20

137 <210> SEQ ID NO 4

138 <211> LENGTH: 20

139 <212> TYPE: PRT

140 <213> ORGANISM: Escherichia coli

141 <220> FEATURE:

142 <223> OTHER INFORMATION: all occurrences of Xaa=hydroxyproline

143 <400> SEQUENCE: 4

W--> 144 Ala Thr Xaa Ala Thr Pro Ala Ala Thr Xaa Ala Ala Ala Gly Gly Lys

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```
145          1          5          10          15
146      Ala Thr Thr Asp
147          20
148      <210> SEQ ID NO 5
149      <211> LENGTH: 20
150      <212> TYPE: PRT
151      <213> ORGANISM: Escherichia coli
152      <220> FEATURE:
153      <223> OTHER INFORMATION: all occurrences of Xaa =hydroxyproline
154      <400> SEQUENCE: 5
155      Ala Ala Ala Gly Gly Lys Ala Thr Thr Asp Glu Gln Lys Leu Leu Glu
156          1          5          10          15
157      Asp Val Asn Ala
158          20
159      <210> SEQ ID NO 6
160      <211> LENGTH: 20
161      <212> TYPE: PRT
162      <213> ORGANISM: Escherichia coli
163      <400> SEQUENCE: 6
164      Glu Gln Lys Leu Leu Glu Asp Val Asn Ala Gly Phe Lys Ala Ala Val
165          1          5          10          15
166      Ala Ala Ala Ala
167          20
168      <210> SEQ ID NO 7
169      <211> LENGTH: 16
170      <212> TYPE: PRT
171      <213> ORGANISM: Escherichia coli
172      <400> SEQUENCE: 7
173      Gly Phe Lys Ala Ala Val Ala Ala Ala Ala Asn Ala Pro Pro Ala Asp
174          1          5          10          15
175      <210> SEQ ID NO 8
176      <211> LENGTH: 20
177      <212> TYPE: PRT
178      <213> ORGANISM: Escherichia coli
179      <400> SEQUENCE: 8
180      Asn Ala Pro Pro Ala Asp Lys Phe Lys Ile Phe Glu Ala Ala Phe Ser
181          1          5          10          15
182      Glu Ser Ser Lys
183          20
184      <210> SEQ ID NO 9
185      <211> LENGTH: 20
186      <212> TYPE: PRT
187      <213> ORGANISM: Escherichia coli
188      <400> SEQUENCE: 9
189      Phe Glu Ala Ala Phe Ser Glu Ser Ser Lys Gly Leu Leu Ala Thr Ser
190          1          5          10          15
191      Ala Ala Lys Ala
192          20
193      <210> SEQ ID NO 10
194      <211> LENGTH: 20
```

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RAW SEQUENCE LISTING
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```

195 <212> TYPE: PRT
196 <213> ORGANISM: Escherichia coli
197 <400> SEQUENCE: 10
198   Gly Leu Leu Ala Thr Ser Ala Ala Lys Ala Pro Gly Leu Ile Pro Lys
199       1             5             10             15
200   Leu Asp Thr Ala
201               20
202 <210> SEQ ID NO 11
203 <211> LENGTH: 20
204 <212> TYPE: PRT
205 <213> ORGANISM: Escherichia coli
206 <400> SEQUENCE: 11
207   Pro Gly Leu Ile Pro Lys Leu Asp Thr Ala Tyr Asp Val Ala Tyr Lys
208       1             5             10             15
209   Ala Ala Glu Gly
210               20
211 <210> SEQ ID NO 12
212 <211> LENGTH: 20
213 <212> TYPE: PRT
214 <213> ORGANISM: Escherichia coli
215 <400> SEQUENCE: 12
216   Tyr Asp Val Ala Tyr Lys Ala Ala Glu Gly Ala Thr Pro Glu Ala Lys
217       1             5             10             15
218   Tyr Asp Ala Phe
219               20
220 <210> SEQ ID NO 13
221 <211> LENGTH: 20
222 <212> TYPE: PRT
223 <213> ORGANISM: Escherichia coli
224 <400> SEQUENCE: 13
225   Ala Thr Pro Glu Ala Lys Tyr Asp Ala Phe Val Thr Ala Leu Thr Glu
226       1             5             10             15
227   Ala Leu Arg Val
228               20
229 <210> SEQ ID NO 14
230 <211> LENGTH: 20
231 <212> TYPE: PRT
232 <213> ORGANISM: Escherichia coli
233 <400> SEQUENCE: 14
234   Val Thr Ala Leu Thr Glu Ala Leu Arg Val Ile Ala Gly Ala Leu Glu
235       1             5             10             15
236   Val His Ala Val
237               20
238 <210> SEQ ID NO 15
239 <211> LENGTH: 20
240 <212> TYPE: PRT
241 <213> ORGANISM: Escherichia coli
242 <400> SEQUENCE: 15
243   Ile Ala Gly Ala Leu Glu Val His Ala Val Lys Pro Ala Thr Glu Glu
       1             5             10             15

```

Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

VERIFICATION SUMMARY
PATENT APPLICATION US/08/737,904FDATE: 04/27/2000
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Line	Error/Warning	Original Text
133	W "N" or "Xaa" used: Feature required	Ala Asp Ala Gly Tyr Thr Xaa Ala Ala Ala A
135	W "N" or "Xaa" used: Feature required	Ala Ala Thr Xaa
144	W "N" or "Xaa" used: Feature required	Ala Thr Xaa Ala Thr Pro Ala Ala Thr Xaa A
385	W "N" or "Xaa" used: Feature required	Ile Ala Lys Val Xaa Pro Gly Xaa Asn Ile T
594	W "N" or "Xaa" used: Feature required	Ala Asp Ala Gly Tyr Thr Xaa Ala Ala Ala A
596	W "N" or "Xaa" used: Feature required	Ala Ala Thr Xaa Ala Ala Ala Gly Gly Lys A
630	W Invalid/Missing Amino Acid Numbering	
742	W "N" or "Xaa" used: Feature required	Ala Asp Ala Gly Tyr Thr Xaa Ala Ala Ala A
744	W "N" or "Xaa" used: Feature required	Ala Ala Thr Xaa
753	W "N" or "Xaa" used: Feature required	Ala Thr Xaa Ala Thr Xaa Ala Ala Thr Xaa A